Institutional Arrangements for Harmful Algal Bloom Monitoring and Management in Puget Sound: An Analysis of SoundToxins

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Institutional Arrangements for Harmful Algal Bloom Monitoring and Management in Puget Sound: An Evaluation of SoundToxins

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Outline

I. Background - existing institutions
II. Problem Statement - why evaluation?
III. Methods - social science
I. Results
II. Discussion
   I. Recommendations
   II. Programmatic Restructure
I. Background
II. Problem Statement

✧ Initial interviews with SoundToxins program managers indicate that the program had **mixed success**.

✧ Sampling records show that **participation had been low among some partners** for sample collection and/or data sharing.

✧ SoundToxins faces a problem of **collective action**. Often groups of rational actors will not act to achieve a common interest. (Olson, 1965)

Hypotheses:

✧ Each partner incurs **different costs** to participate and derives **different benefits** from the program.

✧ The **information** provided by SoundToxins is not **sufficiently valuable** to shellfish managers to alter their harvest closure **decisions**.

✧ The **programmatic design** of SoundToxins is unfit for the **institutional setting** within which it exists.
III. Methods:

This study employed a mixed methods social science approach including:

- A **review of the literature** on collective action, club theory, value of information in decision-making and institutional analysis and development (IAD).

- **Elite interviewing** techniques to collect data from program managers and participants, shellfish managers, and the research community.

- A **focus group** was to address data communication issues, a primary concern for program managers.
IV. Results: Costs and Benefits

Managers

Costs

Benefits

Time

Time

Time

Unseen yet

Citizen Volunteers

Costs

Benefits

Part of a Group

Knowledge of local environ.

Educational opportunities

Time
IV. Results: Value of Information

1. Does the presence of harmful species predict when a closure will occur?

2. Do you believe that cell counts provided by Sound-Toxins will help you to make better decisions?

3. Do you make different decisions when you have access to this information?

**DOH**- Yes, cell counts are helpful, the proof is in ORHAB.

**Commercial Growers**- Unsure if cell counts can predict toxic events. Want to avoid recalls, but feel HABs are currently well-managed.
### IV. Results: IAD Analysis

| Setting | Complex physical setting, several species  
Diverse stakeholders  
Existing institutions that are perceived as more than effective. |
|---------|---------------------------------------------------------------------------------|
| Transaction Costs | Lack of clearly established communication channels  
Volunteer Coordination is time-consuming  
Information Asymmetries exist |
| Institutional Performance | **Efficiency**- could be improved  
**Accountability**- low in lieu of formalized agreements  
**Adaptability**- medium to high (detect new species) |
V. Discussion

Several institutional differences exist between SoundToxins and ORHAB.

✧ Problem/setting complexity
✧ Stakeholder collaboration
✧ Effectiveness of existing institutions
✧ Secure source of funding
✧ Volunteer vs. professional samplers

Potentially the most critical difference is integration within existing institutions.
V. Discussion: Recommendations

✧ Support volunteers
✧ Streamline sampling process
✧ Formalize arrangements
✧ Work toward integration with DOH and other HAB monitoring networks
V. Discussion: Programmatic Restructuring

Several changes since recommendations were made:

- WA SeaGrant contracted to provide volunteer support
- Sampling manual produced simplifying sampling technique—only harmful species
- Action thresholds for reporting
- Volunteers now sign a contract—formalizing agreements with program managers
- Database has been upgraded and is now managed by NOAA—DOH has access and checks on a regular basis
Thank you to my committee:

- Chair - Tom Leschine - School of Marine and Environmental Affairs
- Nives Dolsak - School of Marine and Environmental Affairs
- Vera Trainer - NOAA Northwest Fisheries Science Center

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